1X. Account of a BOOK.

Marcelli Malpighii Philosophi & Medici Bononiensis e Regia Soc. Lond. Opera Posthuma Fig. aneis illustrata quibus prasixa est ejusdem Vita a seipso Scripta Lond. impensis A. & J. Churchill, ad insigne nigricygni in Vico disto Pater-noster-row, 1697, in Fol.

His Posthumous Work of Malpighius, was delivered when he found himself draw near the fatal Period of his Life, with orders to send to the Royal Society after his Death, by whose care it was published, being the last Remains of the Illustrious Malpighi, giving an account of his whole Studies, and some remarkable passages of his Life.

The Work begins with his Life, which is Dedicated to the Royal Society; where he tells us, that Anno 1645. having finish'd his Gramatical Studies, he began to apply himself to the Peripatetick Philosophy, Anno 1649. He fell upon the study of Physick at the Perswasion of his Master Franciscus Natalis, his Father, Mother, and Grand-mother being then dead, and began with Anatomy. Anno 1653. He was honoured with the Laurel. as Doctor of Philosophy and Physick, to which and Anatomy he dedicated himself under the Famous Dr. Massarias, who died Anno 1655. Anno 1656 he was made Publick Reader at Bononia, and Professor of Physick at Pisa, when he began to leave off the disputative, and apply himself to a more Experimental Method, and wrote some Dialogues against the Peripateticks and Ga-Mmmm lenists

lenists, which foon after perish'd, his House being cafually burnt down. About this time he fell acquainted with Magalotti, Chimentelli, Borelli, and other Learned Men. While he stav'd at Pisa, the Academy del Cimento was Instituted by the Grand Duke about this Leaving Pila, he returned to Bononia as a more healthy place in the Year 1660, and with Dr. Fracassatus dedicated himself to Anatomy, when he discovered a new Structure of the Lungs; about which he had several Disputes with the Learned of that time, as Dr. Ent. Thruston, Swammerdam, Willis, Borelli, Paulus Minus. &c. which he relates at large, and in erts their Letters to him about it, with his Aniwers. Anno 1671. He wrote to Mr. Oldenburgh, R. S. Secr. concerning the structure of the Lungs, and the carneous Fibres of the Spleen and Testicles. Anno 1662 he was made Profesfor of Physick in the Academy at Messina: He relates the Subject of his first Lecture there. Retiring sometimes into the Country to a Friends House about the Year 1662, he made his discoveries of the Structure of Plants. and Publish'd his Observations de Ductibus adiposis. de Cerebro, & Lingua, without any Name.

He proceeds to give an account of several other discoveries he made in Anatomy relating to the Brain, Or-

gans of the Sense, of Touching, &c.

Then he tells us several Disputes he had with some Young Physicians that were strenuous afferters of the Galenick Principles and opposed all new Discoveries, such as Avellinus, Valvesius and Liparus, who published a Treatise under the Title of Galenistarum triumphus Neotericorum Medicorum insanias funditus eradicans, &c. to which our Author wrote an Answer under the name of D. Placidus de Papadopulis one of his Scholers which is put out in this work in Latin, at which time he contracted a Friendship with D. Joannes Baptista Caputius,

a Learned Physitian. Next his Treatise of the Structure of the Viscera was Printed: Concerning which he gives an account of some Disputes with several Persons, and confirms his own Sentiments and Discoveries, and proceeds to the structure and use of the Spleen, mentioning several Letters he received from Steno, Gaspar Bartholine, &c. thereupon: As likewise concerning the Polypus in the Heart.

At the end of the Year 1666, he was invited by the Senate of Messina to return to the Publick Academy, which he did the beginning of the next Year, and prosecuted his former Studies and Discoveries: where treating of the Bones, he gives an account of a Petristed Scull and other Bones. After which he gives a large Description of the Teeth of which he also adds the Figures to explain himself the better. He then tells of teveral other Learned Men he grew into Familiarity with, particularly Schenckius, who amongst other things told him of a Woman that had the Hydrophobia from a bite of her Epileptick Daughter.

In October 1667 he received a Letter from Mr. Oldenburgh, inviting him to a Correspondence, at whose Sollicitation he Wrote his History of the Silke-Worm in the Year 1668, and sent it to the Royal Society, and the next Year was Elected a Member of the same, and had his Diploma sent him, Dated Mart. 4. 1669. Next follows a Letter of his to Dr. Sylvester Bonsiliolus with several Additions to his History of the Silk Worm, which he here consirms by some farther Additions, and gives an account of some Disputes he had with Swammerdam thereon, and gives several Figures of the Parts not before Printed; and proceeds to Answer the Objections of Bonanni, concerning the plurality of the Hearts of Silk-Worms.

In the Year 1671, he began his Anatomy of Plants. Printed at London by the Royal Society. Concerning which he relates a Dispute he had with Sign Triumobetti chiefly about the Seminal Plant: and adds some farther Observations made in the Year 1687, upon the Seeds of Cataputia Major with their Figures. His next Difoute was with Borelli concerning the use of the Seminal Leaves, and here also he gives several Curious Figures, with his Observations on the Seeds of Laurel. made Anno 1682, with other Observations on Dates. and their Figures. Other Disputes he had with Father Bonanni, concerning Galls and other excrescencies of Plants. He then gives a short recapitulation of his observations of the Chick in the Egg, and the Generation of Animals, which he fent to the Royal Society about Anno 1672, and tells, that in the following Years he applyed himself to the diffection of several Animals, the first he gives us an account of is an Eagle, the Parts whereof he describes very nicely, he adds an observation of an Eagles Heart that died of a Palpitation of the Heart: in the right Ventricle whereof, he found a large Polypus. as likewise several Tubercles upon the Heart, Lungs. and Ribs. He proceeds to observations on the several Worms found in Animals. Of a flying Glow-worm of two kinds the cause of whose light, he says, proceeds from a certain shining Juice contained in the lower part of it, and is forced out in little Bubbles at two holes at the Tail. Of all these he gives the Figures.

In the next place he gives an account of a Letter he fent to Dr. Jacobus Sponius, Anno 1681, Printed in the Bibliotheca Anatomica, containing feveral matters, Viz. Of the generation of the Horns of Animals; of a new Vessel discovered in the Uterus of a Cow, reaching from the Cornua to the Mea-

tus Vrinarius where it has an open Ductus: and of the manner of the impregnation of the Eggs in Women: and here he adds an account of a Superfætation observed in 1689; as also, of imperfect conceptions, in one of which 'tis observable that it wanted the Head and Legs. but had the Heart with the Aorta and Cava, the rudiments of the Lungs, &c. visible. After some other Observations about Vesicles in the Vterus of Women. he describes a monstrous Hen Egg, containing four Eggs in one, with their Yolks, Whites, and Secundines: This our Author parralels with an observation of a monstruous Limon, and proceeds to give an account of the cause of these Productions or Superfectations. from several successive conceptions in the Vterus, and compares this to the formation of a fort of Stone that feems to contain, or be made up of feveral others included in it.

Our Author in the next place treats of the motion of the Blood which he observed in Frogs to move from the extream parts of the Body, and capillary Veins into larger and larger Vessels till it came to the Heart, he likewise finds, that the motion is sometimes inverted and sometimes stands still, which is supplied by the frequent Anastomoses of the Vessels; nor does it keep the same pace in all the Veins, moving much slower in those that are winding than in strait ones. There are several other curious Observations of the Blood and its Circulations.

Next follow several Observations upon the Hairs of Animals, which are Plants Sui Generis have a bulbous Root and Vegetate, here he inserts an account of an Hair Ball found in the Womb of a Woman, and another under the Skin of an Ox. Hence he comes to treat of the Hairs, Feathers, and Quills of Birds, which he does with his usual accuracy, and ends with his Observati-

ons the Claws, Nails, and Hoofs of Creatures, their Structure. Use and Growth.

Then he says that in the Year 1688, receiving a Letter from R. Waller Esq; Secretary of the Royal Society, requesting him to resume his Studies. He sent them his Epistle of the Glands, which was then Publish'd: about which time Dr. Nuck wrote a Treatise of the Glands, advancing a different sentiment from our Author which he here indeavours to resute.

In the Year 1689, Dr. Paulus Minus set forth several Conclusions or Publick Theses against the Doctrines and Opinions advanced by our Author which he here sets down. The next Year came forth a nameless Book, Intituled De Recentiorum Medicorum studio Dissertatio Epistolaris ad amicum, wherein Anatomical and Microscopial Observations are condemned as useless, and the Empirick Practise of Physick asserted. This Epistle with an Answer to it by our Author is also publish'd in this work.

Lastly, He tells us that Jo. Baptista Triumphetti in a publick Speech in the Physick Garden at Rome, Ridiculed his Anatomy of Plants, Animals, &c. as useless Curiosities, more sit for mere Philosophers, and to divert ingenious Gentlemen, than for Physitians to trouble themselves withal.

Anno 1691, He was sent for to Rome by Pope Innocent the XII. to be his Physitian, where the 29th of November 1694 this Great Man died of an Apoplexy in the Quirinal.

This Postumous Work of Sign^{r.} Malpighi, besides his Life, &c. wrote as was said by himself, contains some other Tractates which he desired should be publish'd, and first a Treatise by Sign^{r.} Joannes Alphonsus Borellus which is here printed in Italian and Latin, concerning the disputes of Sign^{r.} Firichius and Faba English Men, and

the Great Duke of Tuscanies Anatomists. The Dispute is conceening the Optick Nerve of the Sword-fish or Tunny, whether Malpighi was the first that observed it to be a large nervous Membrane, &c. or whether Bartholomeus Eustachius an Italian Anatomist of the last Age was the first discoverer thereof. Now tho' it be granted that Eustachius might observe something thereof accidentally, yet not having prosecuted it, nor he thinks named the Animal in which it is, he asserms Malpighito be the first Inventor thereof, for several Reasons which he alledges; shewing, that any thing may be said to be new, tho' possibly it might have been known in formertimes, if the memory of it is wholly perish'd, which he shews to be the present case in relation to Malpighi.

The Second is a Treatise under the Name of Dr. Placidus Papadopolis Messanensis, being in answer to a Book Intituled. Triumphus Galenistarum contra Philosophos ac Medicos recentes in humano corpore nonnullarum partium ac operationum, ignotarum antiquis Medicinæ Professoribus, this is a Defence of Malpighi, in which he answers each conclusion or Member of the Book wherein. Physick is afferted to be already perfect, and needs not any additions or new discoveries to be made by Anatomy or Experiments, it being sufficient to study the Old Authors and follow their steps, the contrary to which is demonstrated in this defence from the concessions and practice of Hippocrates, Galen, &c. themselves. they proceed to feveral Particulars; as whether the Heart be the Origine of heat, which in this Tract is denied, and shewn to be no hotter than other of the Viscera. The next Question is, whether the Lungs or Liver are principal actors in Sanguification, the reasons for the Liver are first set down out of the Triumph. Galenist. and then answered in this Treatise, where he also shews, that 'tis chiefly made in the Lungs from several Anatomical

mical and other Observations, then he comes to the Four Nutritious Humours, Blood, Choler, Spittle and Melancholy, which the Opponent proving out of Hippocrates, our Author shews that Hippocrates is not in this matter confistent with himself: sometimes constituting but two. sometimes more Humours: he likewise Answers the Authority of Galen: as also his other Reafons from the Four Seafons of the Year. &c. which he brings a Citation out of Willis de Ferment. Whereupon he enlarges chiefly upon the motions of matter that are observable in Animals, and thence explicates the cause of Fevers, and so proceeds to the examination of several other Diseases disputed of between the Galenists and Moderns, the Opponent calls Novatores. and first whether blood-letting be necessary in Apoplexys; our Author affirming it to be so, the other having afferted the contrary. Secondly, Concerning the Pleurifie. whether it be seated in the Lungs or Pleura: the former is defended by our Author, the rest of the Treatife relates to the Method of curing Diseases especially Fevers, whether by Purging, Vomiting, and Sweating or by Blood-letting, the later being chiefly approved by our Author, shewing the danger of a Looseness in an illness from the Historys of Hippocrates concerning Epidemick Fevers. This Treatile being mostly Polemick ought to be read it self, it not being so easie to make an extract thereof without being too large.

The next Treatise Printed in this work is, De recentiorum Medicorum studio Dissertatio Epistolaris ad Amicum, this Tract is mentioned by our Author in his Life, where he gives some account of it himself: The design of the Writer thereof is to shew, that a more subtil and curious Anatomy of the Parts, the Anatomy of Plants, and Comparative Anatomy are little or not at all serviceable to the more solid Practice of Physick. The sirst

he endeavours to prove from the Authority of Galen. Cellus, Helmont, &c. then he fays, that no new use of most of the Parts having been discovered by this nice over curious Anatomy; it is of necessity, of no value: fays, that the Urine was separated by the Ridnies, before they were discovered to be furnish'd with Glands and Tubuli, &c. And where any new use is ascribed to them, they have rather overthrown the old Opinions, than Established new Truths, which he instances in the Pancreas and Spleen. Secondly, As to the Diseases of the Parts, no new or better way of Cure has been found out. Thirdly, 'tis not needful to know them otherwise a Diseased Spleen or Pancre. as, would never be Cured, because their use is not vet known, the contrary of which is daily found by Experience, those parts being as Curable as others. he extends also to the Brain, Lungs and Diaphragm Parts, tho' subtilly Dissected, yet not better known as to their Use or Cure, which he instances in some Diseases. Remedies for which have been found out by Chance, not from the Knowledge of the Parts.

He then takes Comparative Anatomy in Hand, which he says can signify nothing to the advancing Physick: Animals are so different from each other in all their Parts, that nothing of use for Man can from them be discovered, tho he allows Zootomy to be necessary for the compleating of Natural History, but signifies nothing to the Physician, whose business is to Cure, not be Curious.

Lastly, He comes to Dendranatome, which he also affirms unnecessary in Physick; all the Discoveries of the parts of Plants, being like Tantalus's Gardens, delusive Vanities, the virtues of Plants not being the better discernible from their Minute parts, being Microscopically viewed. The Cause of the Stinging of the N n n n

Nettle not being better known, tho' its Asperities are discovered. In fine, he recommends Experience, Observation, and the like, as more likely to discover the Quantity and Quality of Remedies, with their Use and most fit times of Application, than these supposed Inventions and curious Speculations.

To this Epistle Snr Malpighi subjoins a large and very particular Answer, having first inserted in this Work an extraordinary Case of a young Lady, afflicted with a Complication of Diseases, proceeding chiefly from Melancholy, all which she bore with an Heroick Fortitude, that she could hardly be said to be unhappy, tho labouring under loss of Appetite, trequent Vomitings of undigested Food; Palpitations of the Heart, with great gnawing Pains; Hysterick Fits, Faintings, &c. with a Swelling in the Abdomen, like an Aneurism, all which reduced the Patient to a Skeleton, as she then was, when the Account was given of her.

Here follows Snr. Malpighi's Reply to the Episse De Recentiorum Medicorum Studio. &c. where in the first place he observes from Hippocrates, that Men condemn that as superfluous, which they are deficient in themselves: and complaining of the hard usage he has met with from the ill-nature of some Men, he comes to answer the Treatise it self (having first given some account of the Author, who was at first an Anatomy-Reader, and teacher of the Rational Practice of Phyfick) and observes, that the Author omits many things of great weight, that the Modern Practifers of Physick carefully regard, and insists only upon the three particulars mentioned in the Letter, as if they were their whole Care and Study, viz. the more curious Anatomy, Dendranatome and Comparative Anatomy, whereas the very Titles of Books Printed, shews on

the contrary their application to Chymistry, Mechanicks. Generation of Animals, to find out the feats of Diseases, with their Causes, &c. which the Author of the Epistle could not be ignorant of whence he concludes it was defignedly levelled at himself and his Studies. which were chiefly of those three Subjects. shews, that the Ancient as well as Modern Physicians applied themselves diligently to Anatomy, and Galen himself to that of Plants, as likewise Cesalpinas and Mizaldus, and hints at the use and necessity of Microscopes, to discover the Minute Operations of Nature: The whole Answer to this Epistle being pretty large. and this Extract of the Work already extended too far. I shall only touch upon some few of the principal Heads, and Conclude. First he shews, that but www in respect of the great Number of Practitioners apply themselves to those three Anatomies; and they that have so done, have not so wholly Studied that, as to neglect other parts of Medicinal Learning, and tho' it should be granted, these three things did conduce but little to the more solid Medicine, yet still they render the Physician more Compleat. And here, by the way, he determines what may be a Solidior Medicina Practica, which he will not allow to be only Empirical. as the Author of the Epistle contends; but a truly Rational Method, which he shews was the more Ancient. and the Empirick but an Heresie from it; this is founded upon a true Anatomical Knowledge of the several parts of the Body, by the means of Philosophy and Mechanicks; whence we proceed, a priori to Physiology, Pathology, and lastly, the Art of Medicine. Here he gives some Instances of the use of Mechanical Experiments, to Explicate Vision, Pulsation of the Arteries, Respiration, Coction or Digestion, &c. and tho' we cannot know the way that the Soul actuates the Nnnn2 Body.

Body, by the Brain and Nerves, yet we may discover the Engines it makes use of to perform its Operations, whence the Physician may come to the Knowledge of rectifying the Engine, and fitting it for the Souls use. In the next place he shews the weakness of the Empirick: and that even by the Concessions of his Opponent, it is fain to be beholden to the former for what it has of solid, for casual and fortuitous Remedies ought to be Examined by reason as well as Experience. Coming closer to the Argument he proves. that the more Curious subtile Anatomy, is not useless to the Cure of Diseases, answering his Citations from the Authority of Galen, who was himself as Curious as he could, not being furnish'd with Microscopes and other helps of later Invention: As to the necesfity of the more curious Anatomy, he instances in the Discoveries that have been thereby made in the use of the Parts and their Diseases, viz. of the Spleen, Lungs. and Glands, under the Tongue, Palate and Trachea. Glandulous Structure of the Pleura, and Peritoneum. Proceeding farther he shews, that neither the Methodifts nor Chimists ever despised Anatomy; and then fets down the different uses ascribed by the Ancients and Moderns to several parts of the Body, viz. the Kidnevs. Liver and Gall: and thence shews, contrary to the Opposers Assertion, how they differ, and affirms, that the Moderns have in many things reformed the ancient Practife, instancing in some Diseases of the Kid-After this he shews, from the Authors of the Biblioth. Anat. some new Discoveries that have been made, as the Structure and use of the Heart, with the Circulation of the Blood, Motion of the Arreries, use of the Veins, the Lymphaticks, the Lacteal Veins, Structure of the Liver, and Motion of the Gall, Structure and use of the Pancreas, of the Spleen.

of the Parotides, of the Glands of the Palate and Trachea, of the Brain, of the Kidnies, of the Paville. of the Tongue for the Taste, and of the Skin for the Touch, of the Glands, of the Ventricle, of the Conglobated Glands, of the ways of Sweat and Transpiration, of the Eggs in Viviparous Animals, of the Tracheæ in Insects, Plants, and impersect Animals, of Respiration in all living Creatures, with the Structure of the Lungs and Muscles, &c. And then shews the Ancients were not more Successful in Curing Diseases than the Moderns, whose Method is at least more rational and safe, and less vexatious to the Patient. stances in some, and then shews how several Diseases are better Cured now than formerly, and ends his Reply to the first of the Objectors three things, with answering his Citation out of Hippocrates against Anatomy.

Coming to Treat of the Second, viz. Comparative Anatomy, which he thews to have been recommended by the Lord Bacon, as necessary, not only to the compleating Natural History, but likely also to discover the use of the Parts in Man; wherefore several Members of the Royal Society set upon it, and were followed by the Learned of France and Germany. This Zootomy he shews to be serviceable to Physick; those Parts that are not so discoverable in one Animal, being more evident in another; and tho' possibly they may differ fomething in the Figuration, yet they are Analogically reducible to the same Machine: Of this he gives feveral Instances in the Sturcture of the Lungs, Brain, Eyes, the use of the Gall, Circulation of the Blood, &c. which are more visible in one Animal than another: and then answers the Objection from the great variety of Animals, which tho' indeed numerous, yet may be reduced to severals Heads, all these under one Genus, having.

having much the same Figuration of Parts. for the same uses, as the Wings of Birds for Flying: And the variety of the internal Parts depends upon the Quality of the Nourishment or Nature of the place where they live, or other Circumstances: Instancing in some, he says, the Oeconomy is nevertheless much the same: next he answers his Citations our of Hippocrates and concludes this second part with answering the Opponents Dilemma, which is this. Zootomy is either for compleating natural History. and then belongs to the Philosopher, or for the better Attainment of the Cure of Diseases: but since by it no new Medicines are found out, neither can it be useful to the Physician any way. After the Answer to this, he shews, that the Moderns have not been wanting in their Observations and Experiments on the Humors of the Body, and inferts his own upon the Blood: and so comes to handle the last part, concern-Dendranatome, which our Author confesses was not profecuted by himself or others, upon the Account of the Practice of Physick, or thereby to find out new Remedies: But for the Cultivation of that part of Natural Knowledge, which before was but little known. And shews, that Galen and others did the same: Then he defends his Compairing some of the Parts of Plants with those of Animals, tho' others might have extended this too far, as Montalbanus Mizaldus, &c. proves in the next place, the Discoveries that have been made in the Structure of Plants by Microscopes, and to what purpose; and adds that Dendranatome may, tho' more remotely, advance even the Practice of Physick, by the Discovery of the Oeconomy of Plants, as from the Generation of Galls: he Explicates the Causes of Pustles and Tubercles rising up in Animals. After this he shews the Disquisition

of the Nature of Salts (objected against by the Opponent) to be no useless Study, instancing how it serves to discover the Nature of the Blood. Coming to Treat of the Seminal Leaves, he shews their use, then he anfwers the Quotations out of Galen and others, against these Curiosities: he shews him to be mistaken in his Story of Gnidius the Architect, from the Authority of Strabo and Pliny, wonders the Opponent should mention Passion, or any Intemperance in the Moderns: professing that he can find little of that kind in their Works, which are wrote with the greatest Modesty, as he Instances in Galileo, Redi, Boyle, Willis, &c. nor are the Titles now bestowed on Learned Men, so extravagant as those of the past Age, in which the Attribute of Divine was frequent, even to Poets, as to Petrarch, &c. He adds, that whatever the Opponent may fancy of the short Life of the Fame of new Difcoveries, fays, Anatomy had its Original from the Sacrifices of the Jews and Gentiles, was Cultivated by Hippocrates and Democritus, augmented by Erafistratus, but chiefly by Erophilus, who diffected Condemned Persons alive, which getting him the hatred of the People, Dead as well as Living were Dissections forbidden. It was at this time practised in Ægypt, where Galen was Instructed therein; after that it was Received, tho' not Increased, by the Arabians, was revived in Italy, in the 13th Age, by Mundinus, and advanced by Vefalius Columbus. &c. till in this last Age it is come to that Height and Perfection we now admire; so that as since from the first beginning it has never been wholly neglected, but still gone on Increasing; so we have no reafon to apprehend it will by Future Ages be so slighted, as to be thrown by as a useless Speculation, as the Opponent predicts; whose Discourse ending with Seneca's advice to Lucillius, against useless Learning, our Author Examines the Passage in Seneca, and says, that Seneca advised against Sophistical and Cavelling contentious Disputes, as of no advantage to make Men better, and therefore useless, which cannot be said of the things Condemned by the Author of the Epistle, which are neither liable to Sophistry nor Cavillations.

Lastly, as to the Date of the Epistle; Our Author shews it to be false, for whereas he Dates it Gottingæ idibus Sept. 1687. it ought to have been much later, for 'twas not Published till the beginning of 1689. after the Conclusions disputed the 13th of January, and publick Anatomy by D. Paulus Minus, Ap. 12.

In the Conclusion of this Posthumous Work, is Reprinted our Authors Epistle of the Structure of the Conglobated Glands, first Publish'd Anno 1689, and of which there is an Account already given in these Transactions.

LONDON:

Printed for Sam. Smith, and Benj. Wallford, Printers to the Royal Society, at the Princes Arms in St. Paul's Church-Yard. 1697.

D. Gorgon